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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,798	08/28/2003	Hirokazu Arai	AI 304	5608

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EXAMINER

POULOS, SANDRA K

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/649,798

Applicant(s)

ARAI ET AL.

Examiner

Sandra K. Poulos

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2 & 4-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/10/05; 12/30/05; 2/27/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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### DETAILED ACTION

1. All outstanding rejections and objections except for those described below are overcome by applicant's amendment filed 12/30/05.

In light of the new grounds of rejection set forth below, the following action is

**NON-FINAL.**

### *Information Disclosure Statement*

2. The reference JP 06-018964 entitled PHOTOGRAPHING DEVICE, CAMERA AND FINE ADJUSTMENT MECHANISM has not been considered because it does not appear relevant to the present application which concerns a resin pulley.

### *Claim Rejections - 35 USC § 103*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2003-172433 in view of Isutsumi et al (US 5,514,748).

JP '433 discloses a phenol resin pulley having improved dimensional stability, mechanical strength, and wear resistance (abstract). The resin pulley comprises a molded form of a phenol resin composition containing 25-45% resole phenol resin, 3-15% PTFE, 40-60% glass fibers, and 3-15% silica powder (abstract; para 5). The silica powder has a particle size of 100  $\mu$ m or less and in a spherical shape (para 10). The

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silica would intrinsically have a Mohs hardness of not less than 6.5 for the reasons set forth in the previous office action (see handbook of fillers). JP '433 and the current claims share the point 15% for the inorganic powder and 40% for glass fibers. The PTFE has a particle size of 100  $\mu\text{m}$  or less and is preferably present in the amount of 3-7% (para 11). The PTFE is used to raise lubricity (para 11).

JP '433 does not explicitly disclose a particle size of 1-10  $\mu\text{m}$  for PTFE, a particle size of less than 30  $\mu\text{m}$  for spherical silica, or that the phenol resin has a molecular weight of 600-900.

Isutsumi discloses a molding resin contained cured phenolic resin (col 18, lines 16-67), fibrous filler (col 21, line 59 to col 22, line 62), and 3 to 14 parts PTFE for improving wear resistance (col 19 line 1 to col 21 line 58). The PTFE has low friction features and has a particle size of 5 to 10  $\mu\text{m}$  (col 19 line 51 to col 21 line 58). At the defined particle size the PTFE has "outstanding" properties (col 20, line 39). The composition is open to other materials including silica and alumina (col 19, lines 16-28).

It would have been obvious to one of ordinary skill in the art to use PTFE that has a particle size of 5-10  $\mu\text{m}$  in the composition disclosed by JP '433 because of the improved properties as disclosed by Isutsumi. Since JP '433 broadly discloses that the PTFE would be under 100  $\mu\text{m}$ , the use of PTFE with a particle size of 5-10  $\mu\text{m}$  would still be within the scope of the invention.

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4. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2003-172433 in view of Isutsumi et al (US 5,514,748) as applied to claim\*\*\* above, and further in view of Asai et al (US 6,716,907).

The discussion with respect to JP '433 in view of Isutsumi in paragraph 3 above is incorporated herein by reference.

JP '433 in view of Isutsumi does not explicitly disclose a particle size of less than 30  $\mu\text{m}$  for spherical silica, or that the phenol resin has a molecular weight of 600-900.

Asai discloses a phenolic molding pulley composition containing 40-100 parts fiber and 30 to 90 parts silica powder with a mean particle size of 20 to 150  $\mu\text{m}$  (col 1 line 63 to col 2 line 10). The phenolic resin has a molecular weight of 600 to 800 in order to improve heat shock resistance (col 2, lines 16-34). The pulverized type of natural silica powder is preferably used because the frictional resistance due to mobility of the pulley prevents the silica powder from dropping out (col 3, lines 4-2) and the silica has a particle size of 25  $\mu\text{m}$  in Example 1.

It would have been obvious to one of ordinary skill in the art to the 600-800 molecular weight phenolic resin and low particle size silica as disclosed by Asai in the composition of JP '433 because of the disclosed benefits in the making of the resin pulley. Since JP '433 broadly discloses that the silica would be under 100  $\mu\text{m}$ , the use of silica with a particle size of about 25  $\mu\text{m}$  would still be within the scope of the invention.

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5. Claims 1-2, 4, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 06-322232 in view of Isutusmi et al (US 5,514,748).

JP '322 discloses a phenolic molding composition comprising glass fibers, powdery silica, lubricating resin (abstract; para 1-2). In an example, 35 pts of a novolak type phenol resin, 40 pts glass fibers, 5 pts silica, and 2 pts powdery PTFE are combined (abstract). The fibers are present in 40-80 pts, 5-15 pts silica, 5-25 pts lubrication PTFE resin (para 4). The fluoro resin should be under 50  $\mu\text{m}$  (para 6). In the example, the silica has a size of 16 nm (para 8). The silica would intrinsically have a Mohs hardness of not less than 6.5 for the reasons set forth in the previous office action (see handbook of fillers). Although the composition is not explicitly used as a pulley, it is to be noted that a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

JP '322 does not explicitly disclose a particle size of 1-10  $\mu\text{m}$  for PTFE.

Isutsumi discloses a molding resin contained cured phenolic resin (col 18, lines 16-67), fibrous filler (col 21, line 59 to col 22, line 62), and 3 to 14 parts PTFE for improving wear resistance (col 19 line 1 to col 21 line 58). The PTFE has low friction features and has a particle size of 5 to 10  $\mu\text{m}$  (col 19 line 51 to col 21 line 58). At the

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defined particle size the PTFE has "outstanding" properties (col 20, line 39). The composition is open to other materials including silica and alumina (col 19, lines 16-28).

It would have been obvious to one of ordinary skill in the art to use PTFE that has a particle size of 5-10  $\mu\text{m}$  in the composition disclosed by JP '322 because of the improved properties as disclosed by Isutsumi. Since JP '322 broadly discloses that the PTFE would be under 50  $\mu\text{m}$ , the use of PTFE with a particle size of 5-10  $\mu\text{m}$  would still be within the scope of the invention.

### ***Response to Arguments***

6. The rejections set forth in the previous office action are overcome by applicant's amendment filed 12/30/05, therefore, applicant's arguments with respect to the combination of Arai (US 6,716,907) and Saeki (US 6,336,025) have been considered but are moot in view of the new ground(s) of rejection.

The declaration under 37 CFR 1.132 filed 12/30/05 is insufficient to overcome the rejections above because the data only shows results for 5  $\mu\text{m}$  and 40  $\mu\text{m}$ , and not for 10  $\mu\text{m}$ , which is the value claimed. Case law holds that evidence is insufficient to rebut a *prima facie* case if not commensurate in scope with the claimed invention. *In re Grasselli*, 713 F.2d 731, 741, 218 USPQ 769, 777 (Fed. Cir. 1983). Case law holds that whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the "objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support." In other words, the showing of unexpected results must be reviewed to see if the results

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occur over the entire claimed range (i.e., scope). *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980), MPEP 716.02(d).

Case law holds that although the record may establish evidence of secondary consideration which are indicia of nonobviousness, the record may also establish such a strong case of obviousness that the objective evidence of nonobviousness is not sufficient to outweigh the evidence of obviousness. *Newell Cos. V. Kenney Mfg. Co.*, 864 F.2d 757, 769, 9 USPQ2d 1417, 1427 (Fed. Cir. 1988), *cert. denied*, 493 U.S. 814 (1989).

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

JP 10-0536952 discloses a phenolic resin molding material comprising glass fibers, fine silica particles, and PTFE lubricant resin with a particle size of less than 50  $\mu\text{m}$ .

JP 60-072952 discloses a sliding material comprising a phenol resin, hard powders such as silica, and solid lubricants.

JP 05-170937 discloses a sliding material comprising glass powder, fibers, and fluororesin.

JP 06-065393 discloses a friction material with fluororesin, glass fibers, and silica powder.

JP 57-205472 discloses a friction material comprising phenol resin, solid lubricant such as fluoro resin, glass fibers, and inorganic particles.

JP 63-170412 discloses a composition comprising novolak epoxy resin, inorganic filler, short fibers, and a fluorine containing rubber component.



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Kanazawa et al (US 5,124,397) discloses a resin sliding material with PTFE of 5  $\mu$ m and glass fibers and optionally other inorganic fillers.

Kawakami et al (US 4,898,905) discloses a sliding material comprising PTFE as a lubricant with phenolic resin and inorganic powders.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra K. Poulos whose telephone number is (571) 272-6428. The examiner can normally be reached on M-F 7:30-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SKP

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